

THE CLAIMS

What is claimed is:

- 5 1. A method of treating or preventing a disorder ameliorated by the inhibition of serotonin reuptake at 5-HT₂ receptors and/or the inhibition of dopamine reuptake at dopamine D₂ receptors in a patient which comprises administering to a patient in need of such treatment or prevention a therapeutically effective amount of a ziprasidone metabolite, or a pharmaceutically acceptable salt, solvate, hydrate, or clathrate thereof.
- 10 2. The method of claim 1 wherein the disorder is selected from the group consisting of neuroleptic disorders, migraines, acute intermittent porphyria, intractable hiccups, Parkinson's disease and epilepsy.
- 15 3. A method of treating or preventing a neuroleptic disorder in a patient which comprises administering to a patient in need of such treatment or prevention a therapeutically effective amount of a ziprasidone metabolite, or a pharmaceutically acceptable salt, solvate, hydrate, or clathrate thereof.
- 20 4. The method of claim 1 or 3 wherein the patient is a human.
- 25 5. The method of claim 1 or 3 wherein the ziprasidone metabolite is ziprasidone sulfoxide or ziprasidone sulfone.
- 30 6. The method of claim 3 wherein the neuroleptic disorder is selected from the group consisting of psychosis, affective disorders, and anxiety.
- 35 7. The method of claim 6 wherein the psychosis is selected from the group consisting of schizophrenia, schizo-affective psychosis, hallucinations, paranoia, affective psychosis, alcoholic psychoses, arteriosclerotic psychosis, amnestic psychosis, bipolar psychosis, Cheyne-Stokes psychosis, climacteric psychosis, depressive psychosis, drug psychosis, dysmnestic psychosis, hysterical psychosis, infection-exhaustion psychosis, Korsakoff's psychosis, postinfectious psychosis, postpartum psychosis, posttraumatic psychosis, senile psychosis, situational psychosis, toxic psychosis, traumatic psychosis, and Windigo psychosis.

8. The method of claim 6 wherein the affective disorder is selected from the group consisting of depression, attention deficit disorder, attention deficit disorder with hyperactivity, bipolar conditions and manic conditions.

5 9. The method of claim 6 wherein the anxiety is selected from the group consisting of anxiety attacks, free-floating anxiety, noetic anxiety, separation anxiety, and situation anxiety.

10 10. The method of claim 1 or 3 wherein the ziprasidone metabolite is administered parenterally, transdermally, mucosally, nasally, buccally, sublingually, or orally.

15 11. The method of claim 10 wherein the ziprasidone metabolite is administered orally.

12. The method of claim 11 wherein the ziprasidone metabolite administered orally in a tablet or capsule form.

20 13. The method of claim 1 or 3 wherein the therapeutically effective amount of ziprasidone metabolite is between about 1 mg and about 1000 mg per day.

14. The method of claim 13 wherein the therapeutically effective amount of ziprasidone metabolite is between about 5 mg to about 500 mg per day.

25 15. The method of claim 14 wherein therapeutically effective amount of ziprasidone metabolite is between about 10 mg to about 200 mg per day.

30 16. A pharmaceutical composition comprising a ziprasidone metabolite, or a pharmaceutically acceptable salt, solvate, hydrate, or clathrate thereof.

17. The pharmaceutical composition of claim 16 wherein the ziprasidone metabolite is ziprasidone sulfoxide or ziprasidone sulfone.

35 18. The pharmaceutical composition of claim 16 wherein said pharmaceutical composition further comprises an additional therapeutic agent selected from the group consisting of: tricyclic antidepressants; anticonvulsants; serotonin reuptake

inhibitors; mixed serotonin-norepinephrine reuptake inhibitors; serotonin receptor agonists; cholinergic analgesics; adrenergic agents; neurokinin antagonists; xanthine oxidase inhibitors; and pharmaceutically acceptable salts and solvates thereof.

5 19. The pharmaceutical composition of claim 18 wherein the tricyclic antidepressant is selected from the group consisting of desipramine, imipramine, amitriptyline, and nortriptyline.

10 20. The pharmaceutical composition of claim 18 wherein the anticonvulsant is selected from the group consisting of carbamazepine and valproate.

15 21. The pharmaceutical composition of claim 18 wherein the serotonin reuptake inhibitor is selected from the group consisting of fluoxetine, paroxetine, sertraline, and methysergide.

20 22. The pharmaceutical composition of claim 18 wherein the mixed serotonin reuptake inhibitor is selected from the group consisting of venlafaxine and duloxetine.

25 23. The pharmaceutical composition of claim 18 wherein the cholinergic analgesic is selected from the group consisting of ketoprofen, aspirin, acetaminophen, indomethacin, ketorolac, and methotrimeprazine.

30 24. The pharmaceutical composition of claim 18 wherein the xanthine oxidase inhibitor is allopurinol.

35 25. The pharmaceutical composition of claim 16 wherein said pharmaceutical composition further comprises a pharmaceutically acceptable carrier.

 26. The pharmaceutical composition of claim 16 wherein said pharmaceutical composition is suitable for parenteral, transdermal, mucosal, nasal, buccal, sublingual, or oral administration to a patient.

 27. The pharmaceutical composition of claim 26 wherein said pharmaceutical composition is suitable for oral administration to a patient.

28. The pharmaceutical composition of claim 16 wherein the amount of ziprasidone metabolite is between about 1 mg and about 1000 mg.

29. The pharmaceutical composition of claim 28 wherein the amount of ziprasidone metabolite is between about 5 mg and about 500 mg.

30. The pharmaceutical composition of claim 29 wherein the amount of ziprasidone metabolite is between about 10 mg and about 200 mg per day.

31. A dosage form suitable for the treatment and prevention of a neuroleptic disorder or pain which comprises a therapeutically effective amount of a ziprasidone metabolite, or a pharmaceutically acceptable salt, solvate, hydrate, or clathrate thereof.

32. The dosage form of claim 31 wherein the ziprasidone metabolite is ziprasidone sulfoxide or ziprasidone sulfone.

33. The dosage form of claim 31 wherein said pharmaceutical composition further comprises an additional therapeutic agent selected from the group consisting of: tricyclic antidepressants; anticonvulsants; serotonin reuptake inhibitors; mixed serotonin-norepinephrine reuptake inhibitors; serotonin receptor agonists; cholinergic analgesics; adrenergic agents; neurokinin antagonists; xanthine oxidase inhibitors; and pharmaceutically acceptable salts and solvates thereof.

34. The dosage form of claim 33 wherein the tricyclic antidepressant is selected from the group consisting of desipramine, imipramine, amitriptyline, and nortriptyline.

35. The dosage form of claim 33 wherein the anticonvulsant is selected from the group consisting of carbamazepine and valproate.

36. The dosage form of claim 33 wherein the serotonin reuptake inhibitor is selected from the group consisting of fluoxetine, paroxetine, sertraline, and methysergide.

37. The dosage form of claim 33 wherein the mixed serotonin reuptake inhibitor is selected from the group consisting of venlafaxine and duloxetine.

38. The dosage form of claim 33 wherein the cholinergic analgesic is selected from the group consisting of ketoprofen, aspirin, acetaminophen, indomethacin, ketorolac, and methotrimeprazine.

39. The dosage form of claim 33 wherein the xanthine oxidase inhibitor is allopurinol.

40. The dosage form of claim 31 wherein said dosage form further comprises a pharmaceutically acceptable carrier.

41. The dosage form of claim 31 wherein said dosage form is suitable for parenteral, transdermal, mucosal, nasal, buccal, sublingual, or oral administration to a patient.

42. The dosage form of claim 41 wherein said dosage form is a capsule or a tablet.

43. The dosage form of claim 31 wherein the amount of ziprasidone metabolite is between about 1 mg and about 1000 mg.

44. The dosage form of claim 43 wherein the amount of ziprasidone metabolite is between about 5 mg and about 500 mg.

45. The dosage form of claim 44 wherein the amount of ziprasidone metabolite is between about 10 mg and about 200 mg per day.

46. A method of preparing ziprasidone sulfoxide which comprises treating ziprasidone with one molar equivalent of an oxidizing agent.

47. The method of claim 46 wherein the oxidizing agent is selected from the group consisting of hydrogen peroxide; sodium periodate; alkylperoxides; alkylhydroperoxides; hypochlorites, such as sodium hypochlorite and calcium hypochlorite; dioxiranes; nitric acid and a gold tetrachloride catalyst; potassium permanganate; sodium

perborate; potassium hydrogen persulfate; molecular oxygen and a ceric ammonium nitrate catalyst; acyl nitrites; sodium perborate; and peracids.

48. A method of preparing ziprasidone sulfone which comprises treating
5 ziprasidone with two molar equivalents of an oxidizing agent.

49. The method of claim 48 wherein the oxidizing agent is selected from
the group consisting of hydrogen peroxide; sodium periodate; alkylperoxides;
alkylhydroperoxides; hypochlorites, such as sodium hypochlorite and calcium hypochlorite;
10 dioxiranes; nitric acid and a gold tetrachloride catalyst; potassium permanganate; sodium
perborate; potassium hydrogen persulfate; molecular oxygen and a ceric ammonium nitrate
catalyst; acyl nitrites; sodium perborate; and peracids.

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